



AFCTN Test Report 94-062

AFCTB-ID
94-012



Technical Illustration Transfer

Using:



Computing Devices Canada's Data



MIL-D-28000A (IGES)



Quick Short Test Report

19960822 080

14 March 1994



Prepared for:
Electronic Systems Center
Det 2 HQ ESC/AV-2
4027 Colonel Glenn Hwy, Suite 300
Dayton, Ohio 45431-1672

[DTC QUALITY INSPECTED 3]

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DTIC QUALITY INSPECTED 3

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Air Force CALS Test Bed

Notification of Test Results

14 March 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

Computing Devices Canada

Identified as follows:

Title:	Technical Illustration Transfer
Program:	N/A
Program Office:	N/A
Contract No.:	N/A
QSTR No.:	AFCTB-ID 94-012

Received on the following media: **Electronic Transfer via Internet**

The results of the AFCTB Quick Short Test Report evaluation are as follows:

MIL-STD-1840A Media Format:	Fail
MIL-D-28000A IGES:	Fail
MIL-M-28001A SGML:	N/A
MIL-R-28002A Raster:	N/A
MIL-D-28003 CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Computing Devices' interpretation and use of the CALS standards in transferring technical illustration data. Computing Devices used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff using an electronic transfer.

2. Test Parameters

Test Plan: AFCTB 94-012

Date of
Evaluation: 14 March 1994

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data
Originator: Dennis Lenard
Computing Devices Canada
P O Box 8508
Ottawa Ontario K1G 3M9
Canada
(613) 596-7744

Data
Description: Technical Manual Test
1 Document Declaration file
2 Initial Graphics Exchange Specficiation
(IGES) files

Data
Source System: 1840

HARDWARE
Unknown

SOFTWARE
Unknown

IGES

HARDWARE
Macintosh/Apple Computer

SOFTWARE
Pass IsoDraw

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.10 UNIX

MIL-D-28000 (IGES)

SGI Indigo2

AUTODESK AutoCAD R12

Cadkey Cadkey v6.0

IGES Data Analysis (IDA) CALSView

Sun SparcStation 2

Carberry CADLeaf Plus v3.1

IDA Parser/Verifier v92

IDA IGESView v3.05

International TechneGroup Incorporated
(ITI) IGES/Works v1.3

Rosetta Technologies Prepare

Rosetta Technologies Preview v3.2

PC 486/50

AUTODESK AutoCAD 386 R12

Cadkey Cadkey v6.0

IDA IGES Parser/Verifier v92

IDA IGESView Windows

Standards

Tested:

MIL-STD-1840A

MIL-D-28000A

3. 1840A Analysis

3.1 External Packaging

The files arrived at the Air Force CALS Test Bed (AFCTB) via an electronic transfer to the internet server.

3.2 Transmission Envelope

The data received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

No tape was submitted for evaluation.

3.2.2 Declaration and Header Fields

Two critical errors were found in the Document Declaration file. Because of the errors, the remaining data files were not processed. One reported error was a long record length for the first field. During a visual inspection of the file, it was noted that the first field ran across two lines. The remaining records were spaced across the screen.

```
*** ERROR (get_headers) - Maximum record length of
    (= 256) exceeded in header record 1 of header file:
    /cals/u1210/Set050/D001/D001_HDR.
    It will be truncated from 258 to 256 characters.
```

```
*** ERROR (MIL-STD-1840A; 5.1) - Invalid number of header records.
    Expected = 15; Records read = 1
    from /cals/u1210/Set050/D001/D001_HDR.
```

The Document Declaration file and CALS headers do not meet the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file transfer contained two IGES files. The files were inspected for the required CALS MIL-D-28000A start section statement, defined in para. 3.2.1.3.1. This conformance statement was not found.

These files were evaluated using IDA's *parser/verifier* set for CALS Class I. This utility reported that both files failed to meet the CALS MIL-D-28000A specification. Examples of the reported errors are shown below. The error messages and part of the IGES file are from file D001Q001.

The first reported CALS error was a missing drawing or view entity. Table I in MIL-D-28000A requires one drawing (entity 404) and one view (entity 410). None were present.

ERROR 4031: CALS Class I requires that exactly one drawing be defined.
ERROR 4032: CALS Class I requires that exactly one view be defined.

The next reported CALS errors were in entity 100. Two different errors were reported with this entity. The first was the use of an illegal level. The level in the example below was "3." Note 1 of Table I in MIL-D-28000A requires this value to be "0." This level question is addressed later in this report.

*** Entity type: 100

ERROR 4045: Illegal level for CALS Class I specified at D 9.

				This must be zero (0)					
				vvv.					
100	6	0	1	3	0	7	000020001D	9	
100	2700	1	1	0			D	10	

The second reported error in entity 100 was the use of an illegal line font. MIL-D-28000A, Table 1, Note 1 requires the font to be 1, 2, 3, 4, or 5. In the example below the font number is -5. Also note the level number 227.

ERROR 4046: Illegal line font for CALS Class I specified in D 2537.

			This must be 1, 2, 3, 4, or 5						
			vvv						
100	2275	0	-5	227	0	2535	000020001D	2537	
100	2700	1	1	0			D	2538	

The next reported error is in entity 110 where an illegal font was again specified. The font was defined as a "-5" when the value permitted in MIL-D-28000A, Table 1, Note 3 are 1, 2, 3, 4, or 5. Note that the level is defined as "2" and this must be "0"

*** Entity type: 110

ERROR 4046: Illegal line font for CALS Class I specified in D 73.

			This must be 1, 2, 3, 4, or 5.						
			vvv						
110	56	0	-5	2	0	0	000020001D	73	
110	1800	1	1	0			D	74	

The next reported error was the use of entity 304, line font definition. This entity is not permitted in Class I files per MIL-D-28000A, Table 1.

*** Entity type: 304

WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D1 is Undefined.

The next reported error was the use of entity 402, associativity instance. This entity is not permitted in Class I files per MIL-D-28000A, Table 1.

*** Entity type: 402

WARNING 4038: Entity type is not allowed in CALS Class I.

Additional basic IGES errors and warnings were noted during this parsing operation. See the log files in Appendix B for additional information.

Following is a general comment about the file construction. It appeared each entity was created on its own level, and some entities were created on several levels, as noted above. The CALS MIL-D-28000A requires some entities to be placed on specified levels, but others can be placed as required. Normally one entity per level, while not incorrect, is not a good file construction.

The files were converted using another utility available within the AFCTB with reported errors. The application would not process the files since no views were defined. In an attempt to see if the files could be read into the system, CALS Class I files were generated from IDA's *IGESView*. These files were then converted and displayed. The resulting files were read into Island Graphics' *Island-Draw* and displayed without a reported error. This translation was required in order to import the files into the utility. The resulting files displayed many errors in line and arc endings. The use of these files in this application is considered critical, as Class I files are used in publishing systems.

The files were read using AUTODESK's *AutoCAD R12* with translator version 5.1. The translator reported many errors in the entity construction. When the files were viewed and printed many errors were noted. Lines were not connected, the entities looked incorrect, and other visual problems were noted. See Appendix B for hard copies of the files.

The files were converted using Cadkey's *ig2c* utility. During the conversion process, many errors were reported. The resulting files were read into Cadkey's *Cadkey*. Many of entities were missing when displayed and printed. The missing entities were placed on level 256, which in Cadkey, is a blanked level. By changing the Cadkey configuration file, these entities were moved to a visible level and could be seen.

The files were read into Carberry's *CADLeaf* software without a reported error. The displayed and printed copies appear to be complete and usable.

The files were read using IDA's *CALSVIEW*. No errors were reported during the read, however, the images displayed on the screen had noted errors.

The files were read using IDA's *IGESVIEW* and *IGESVIEW for Windows* without a reported error. The images displayed on the screen had noted errors with disjointed lines and arcs. The hard copies generated did not display the errors noted on the screen.

The files were read using ITI's *IGESWORKS* with reported errors. See the parser log in Appendix B, Section 10.2.3 to this report. The displayed and printed images appeared to be complete, though some errors were noted in the oval entities.

The IGES files were converted using Rosetta Technologies' *Prepare* with reported errors. The resulting files were read into Rosetta Technologies' *Preview*, displayed and printed. The images had missing lines noted.

The IGES files do not meet the CALS MIL-D-28000A specification, due to the reported CALS IGES errors. The construction of the files appeared to be flawed in that most applications did not display a correct image.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were include in this evaluation.

6. Raster Analysis

No Raster files were included in this evaluation.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included in this evaluation.

8. Conclusions and Recommendations

In summary, the files from Computing Devices Canada had basic errors. The remainder of the files in the set were not parsed because of errors in the Document Declaration file. The errors in the CALS headers were critical, they were removed in order to complete the evaluation, and should be corrected before resubmitting. The file set does not meet the CALS MIL-STD-1840A requirements.

The two IGES files had several CALS Class I errors, and basic IGES errors. The files do not meet the CALS MIL-D-28000A specification.

The file set does not meet the CALS MIL-STD-1840A requirements, due to the reported errors.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Mar 14 12:23:45 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set050

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00256	02048/000000	Extracted
D001Q001	IGES	F/00080	02000/000000	Extracted
D001Q002	IGES	F/00080	02000/000000	Extracted

Catalog Process terminated normally.

9.2 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Mon Mar 14 12:23:45 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set050

Found file: D001

Extracting Document Declaration Header Records...

*** ERROR (get_headers) - Maximum record length of
(= 256) exceeded in header record 1 of header file:
/cals/u1210/Set050/D001/D001_HDR.
It will be truncated from 258 to 256 characters.

*** ERROR (MIL-STD-1840A; 5.1) - Invalid number of header records.
Expected = 15; Records read = 1
from /cals/u1210/Set050/D001/D001_HDR.

*** I/O ERROR - MIL-STD-1840A Document Declaration Header Records
could not be extracted from /cals/u1210/Set050/D001/D001_HDR

A grand total of 1 error(s), 0 warning(s), and 0 note(s) were
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

9.3 Other Tape Reading Logs

Include other log here if errors were reported.

10. Appendix B - Detailed IGES Analysis

10.1 File D001Q001

10.1.1 Parser/Verifier Log

```
*****
*****  IGES PARSER/VERIFIER  *****
*****      MARCH 1993      *****
*****  IGES Data Analysis  *****
*****    (708) 344-1815    *****
*****
```

Input file is q001.igs

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is March 14, 1994 1:18 PM

```
*****
*****  CHECK FILE SYNTAX  *****
*****
```

Section	Records
Start	1
Global	4
Directory	7330 (3665 Entities)
Parameter	6662
Terminate	1

NITPICK 2452: No decimal point in basic real constant (10) for L[1] of D 1.
NITPICK 2452: No decimal point in basic real constant (5) for L[2] of D 1.
NITPICK 2452: Messages regarding missing decimal point suppressed.

```
*****
*****  SUMMARY AND STATISTICS  ****
*****
```

*** File and Product Name Information ***

File name from sender = 'Example 1 .IGS'
File creation Date.Time = '940307.083434'
Model change Date.Time = ''
Author = 'PASS'
Department = 'Ove Schuett'
Product name from sender = 'PASS Incorporated'
Destination product name = 'Computing Device Manufacturing'

*** Parameter Delimiters ***

Delimiter = ','
Terminator = ';'

*** Originating System Data ***

System ID = 'Macintosh'
Preprocessor version = 'ITEDO IsoDraw'
Specification version = 6 (IGES 4.0)

*** Precision levels ***

Integer bits = 32
Floating point - Exponent = 8 Mantissa = 24
Double precision - Exponent = 8 Mantissa = 53
NITPICK 2329: Real constant characteristics inconsistent with specification version.

*** Global Model Data ***

Model scale = 1.0000E+00
Unit flag = 2
Units = 'MM'
Line weights = 30000
Maximum line thickness = 1.089800E+00
Minimum line thickness = 3.632667E-05
Granularity = 1.000000E-04
Maximum coordinate = 3.001651E+02

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status: Visible	3665
Blanked	0

Independence:	Independent	600
	Physically Subordinate	0
	Logically Subordinate	3065
	Totally Subordinate	0
Entity use:	Geometry	3054
	Annotation	0
	Definition	3
	Other	608
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	3665
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	----	-----	-----	----
100	0	3	2	Circular arc
100	0	4	2	
100	0	5	1	
100	0	6	2	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

110	0	1	4	Line
110	0	2	55	
110	0	47	9	
110	0	48	2	
110	0	56	10	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

112	0	8	2	Parametric spline curve
112	0	12	2	
112	0	14	2	
112	0	15	2	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

124	0	0	596	Transformation matrix
230	0	8	2	Sectioned area (Standard Crosshatching)
230	0	12	2	
230	0	14	2	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

304	2	0	3	Line font definition - repeating pattern
402	7	0	1	Group without back-pointers instance
402	7	1	9	
402	7	2	40	
402	7	7	3	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

402	7	599	5
402	7	600	4

ERROR 4031: CALS Class I requires that exactly one drawing be defined.
ERROR 4032: CALS Class I requires that exactly one view be defined.

*** Entity Count by Level ***

Level	Count
0	600
1	13
2	95
3	2

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

605	6
606	6
607	1
608	8

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 3665

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	374	-	Undefined
923	-	-	-	-	675	38	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
4	-	-	-	-	70	-	-	User defined

116	118	120	122	124	125	126	128	
-	-	-	-	596	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	3	(0.0000)
1	1952	(0.0000)
2700	615	(0.0981)
6000	839	(0.2180)
15000	100	(0.5449)
1800	84	(0.0654)
18000	8	(0.6539)
4500	35	(0.1635)
1950	25	(0.0708)
30000	1	(1.0898)
3750	3	(0.1362)

*** Colors Used in Data ***

Defaulted	1207
Black	2322
White	136

***** ENTITY ANALYSIS *****

*** Entity type: 100

ERROR 4045: Illegal level for CALS Class I specified at D 9.

ERROR 4045: Illegal level for CALS Class I specified at D 11.
ERROR 4045: Messages regarding illegal levels suppressed.
ERROR 2242: Radii not equal at D 1997; difference is 1.029509E-04.
ERROR 2242: Radii not equal at D 2001; difference is 1.029509E-04.
ERROR 4046: Illegal line font for CALS Class I specified in D 2537.
ERROR 4046: Illegal line font for CALS Class I specified in D 2543.
ERROR 4046: Illegal line font for CALS Class I specified in D 2545.
ERROR 4046: Illegal line font for CALS Class I specified in D 2555.

*** Entity type: 110

ERROR 4046: Illegal line font for CALS Class I specified in D 73.
ERROR 4046: Illegal line font for CALS Class I specified in D 495.
ERROR 4046: Messages regarding illegal line fonts suppressed.
-- 745 lines averaging 6.983040E+00 units --

*** Entity type: 112

WARNING 2002: 3 discontinuities in spline curve at D 47, largest is
1.414214E-04 units.
WARNING 2492> Undefined line font value (0) specified for D 47.
WARNING 2002: 1 discontinuities in spline curve at D 51, largest is
1.414214E-04 units.
WARNING 2492: Undefined line font value (0) specified for D 51.
WARNING 2492: Messages regarding undefined line font suppressed. WARNING 2002: Message
regarding discontinuities in spline curve suppressed.

*** Entity type: 124

WARNING 2313: Improper definition space (defining vector magnitude not unit by
2.952228E-01) at D 7.
ERROR 2095: Improper definition space at D 7, determinant not +1. by
4.264578E-01.
WARNING 2313: Messages regarding definition space suppressed.
ERROR 2095: Messages regarding improper definition space suppressed.
596 transformation matrices, 596 non-zero translations.
NOTE 2341: 596 matrices contain translation information.

*** Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D 49.
NITPICK 2076: Entity does not have Annotation flag set at D 53.
NITPICK 2076: Messages regarding entity use (annotation) suppressed.

*** Entity type: 304

WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D 1 is Undefined.
WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D 3 is Undefined.
WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D 5 is Undefined.

*** Entity type: 402

WARNING 4038: Entity type is not allowed in CALS Class I.
WARNING 4038: Entity type is not allowed in CALS Class I.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

WARNING 4038: Entity type is not allowed in CALS Class I.
WARNING 4038: Entity type is not allowed in CALS Class I.

*** Message Summary ***

2007: 342 Mathematical discontinuities.
2015: 597 Mathematically incorrect definitions.
2016: 374 Invalid entity use flag.
2038: 1955 Invalid Line font values.
4000: 2 Miscellaneous CALS messages
4016: 822 Illegal line fonts
4018: 611 Illegal entity types
4020: 2084 Illegal levels

*** Error Summary ***

0 fatal errors
0 severe errors
3505 errors
3503 warnings
0 cautions
5113 nitpicks
1 notes

*** End of Analysis of q001.igs ***

10.1.2 Parser Log - AutoCAD R12

Title: IGESIN Journal (v5.1 Nov 05 1992)

File: C:/TMP/Q001.xli

Date: Mon, Mar 14, 1994

Time: 14:26:50

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N: 117-10075750

Translating from IGES file: C:/TMP/Q001.IGS
to AutoCAD Drawing: C:\Q001.dwg

Options obtained from: default settings

Curves Approximated to Tolerance of 0.01

Surfaces Approximated to Tolerance of 0.01

Text Font/Style mapping:

IGES Text font	Style Name	ACAD Font
0	SYMBOL0	iges0
1	STANDARD	txt
2	LEROY	txt
3	FUTURA	txt
6	COMP80	txt
12	GOTHICE	gothice
13	GOTHICI	gothici
14	ROMANS	romans
17	ROMANT	romant
18	ROMAND	romand
19	OCR	txt
1001	SYMBOL1	iges1001
1002	SYMBOL2	iges1002
1003	SYMBOL3	iges1003
2001	KANJI	bigfont

IGES Linefont/AutoCAD Linetype mapping

IGES Line Font	AutoCAD linetype	Shape file
0	BYLAYER	
1	CONTINUOUS	
2	DASHED	acad.lin
3	PHANTOM	acad.lin
4	CENTER	acad.lin
5	DOT	acad.lin

=====

Parse phase

*** Warning (IAFP_LARGER_SGL_SIG) ***

C:/TMP/Q001.IGS, line 5: IGES file has greater number of significant digits in single precision numbers than this system.

*** Warning (IAFP_LARGER_DBL_SIG) ***

C:/TMP/Q001.IGS, line 5: IGES file has greater number of significant digits in double precision numbers than this system.

*** Warning (IAFP_FLOAT_EXPECTED) ***

304,2,10,5,1H2,0,0; 1P 1

C:/TMP/Q001.IGS, line 7336: Integer found where floating point type was expected. Integer value will be converted to floating point.

*** Warning (IAFP_FLOAT_EXPECTED) ***

304,2,10,5,1H2,0,0; 1P 1

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

C:/TMP/Q001.IGS, line 7347: Integer found where floating point type was expected. Integer value will be converted to floating point.

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 7, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

*** Warning (IEVM_BAD_DETERM_124) ***

(DE 7, TF 124:0) Entity has an invalid determinant value. Value found was 0.8920660458. For form 0, the determinate must be 1.0

*** Warning (IEVM_BAD_CROSS_PROD_124) ***

(DE 7, TF 124:0) Entity's is not orthogonal.

Action taken: Entity made orthogonal by assuming X and Y are correct.

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***

(DE 9, TF 100:0) Entity's radii are not equal. Start point radius: 6.9660000e+000. Terminate point radius: 6.9660718e+000.

Action taken: Start point moved 3.5884469e-005 units from -6.9660000e+000, 0.0000000e+000 to -6.9660359e+000, 0.0000000e+000. Terminate point moved 3.5884469e-005 units from -7.8500000e-001, -6.9217000e+000 to -7.8499596e-001, -6.9216643e+000.

<<<< PART OF LOG FILE REMOVED HERE >>>>

*** Warning (IEVM_BAD_CONTINUITY_112) ***

(DE 3425, TF 112:0) Entity's Degree of Continuity, 0, is incorrectly specified.
Degree of Continuity calculated to be 2.

Action taken: Degree of Continuity set to 2.

*** Warning (IEVM_BAD_CONTINUITY_112) ***

(DE 3445, TF 112:0) Entity's Degree of Continuity, 0, is incorrectly specified.
Degree of Continuity calculated to be 2.

Action taken: Degree of Continuity set to 2.

=====
Start Section:

Global Section:

Parameter Delimiter:	,
Record Delimiter:	;
Sending Product ID:	PASS Incorporated
File Name:	Example 1 .IGS
System ID:	Macintosh
Preprocessor Version:	ITEDO IsoDraw
Size of Integer:	32
Sgl. Precision Mag:	8
Sgl. Precision Sig:	24
Dbl. Precision Mag:	8
Dbl. Precision Sig:	53
Receiving Product ID:	Computing Device Manufacturing
Model Space Scale:	1.000000
Unit Flag:	2
Unit String:	MM
# of Line Weights:	30000
Maximum Line Width:	1.089800
Creation Date:	03/07/94 08:34:34
Minimum Resolution:	0.000100
Maximum Coordinate:	300.165100
Author:	PASS
Organization:	Ove Schuett
IGES Version Number:	6
Drafting Standard:	0

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	927
110	0	Line	745
112	0	Parametric Spline Curve	412
124	0	Transformation Matrix	596
230	0	Section Area (Standard Fill)	374
304	2	Line Font Definition (Pattern)	3
402	7	Group (Unordered, w/o back ptrs)	608
Total			3665

Translation phase

*** Error (IGEO_SECTAREANOTCLOSED) ***
(DE: 49 TF: 230:0 NAME: Section Area (Standard Fill))
The section area is not closed.

*** Error (IGEO_SECTAREANOTCLOSED) ***
(DE: 53 TF: 230:0 NAME: Section Area (Standard Fill))
The section area is not closed.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Error (ACAD_APPROXCURVEERROR) ***
Internal error 2302 approximating curve at DE: 4655, TYPE: 230, FORM: 0

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	927	927	0
110	0	Line	745	745	0
112	0	Parametric Spline Curve	412	412	0
124	0	Transformation Matrix	24	0	24
230	0	Section Area (Standard Fill)	374	374	0
402	7	Group (Unordered, w/o back ptrs)	608	608	0
Totals			3090	3066	24

AutoCAD Entity Summary

Entity	Created	Errors
=====	=====	=====
LINE	2122	0
CIRCLE	29	0
ARC	898	0
INSERT	374	0
POLYLINE	412	0
BLOCK	374	0
Totals	=====	=====
	4209	0

=====

Error Summary:

The following message was issued 1 time(s)
IGES file has greater number of significant digits in single precision numbers than this system.

The following message was issued 1 time(s)
IGES file has greater number of significant digits in double precision numbers than this system.

The following message was issued 4738 time(s)
Integer found where floating point type was expected. Integer value will be converted to floating point.
The following message was issued 315 time(s)
Entity's radii are not equal. Start point radius: %.7e. Terminate point radius: %.7e.

The following message was issued 37 time(s)
Entity's Degree of Continuity, %d, is incorrectly specified. Degree of Continuity calculated to be %d.

The following message was issued 456 time(s)
Entity has an invalid determinant value. Value found was % -10.10f. For form %d, the determinate must be % -1.1f

The following message was issued 595 time(s)
Entity has a column which is not a unit vector.

The following message was issued 432 time(s)
Entity's is not orthagonal.

The following message was issued 222 time(s)
The section area is not closed.

The following message was issued 1 time(s)

Internal error %d approximating curve at DE: %d, TYPE: %d, FORM: %d

Status: 0

Warning: 6575

Error: 223

Fatal: 0

Elapsed Time:

Processor: 00:04:34

Clock: 00:04:35

=====

10.1.3 Parser Log - IGESWorks

IGES/Works v1.4.1
International TechneGroup Incorporated
Validation Logfile

Date: March 14, 1994
Model: q001

***** Validation Parameters *****

TOLERANCE CONFIGURATION VALUES

ZERO_TOL	= 1.000000e-13
MODEL_SPACE_PNT_COIN_TOL	= 1.000000e-03
PARM_SPACE_PNT_COIN_TOL	= 1.000000e-08
ISO_PARM_CURVE_TOL	= 1.000000e-08
NON_CONV_TOL	= 1.000000e-12
KNOT_COIN_TOL	= 1.000000e-10
SAME_INTER_TOL	= 1.000000e-12
PARALLEL_LINES_TOL	= 1.000000e-07
ANGLE_COIN_TOL	= 1.000000e-05
PNT_PROJ_TOL	= 1.000000e-07
COLIN_TOL	= 1.000000e-07
COPLANAR_TOL	= 1.000000e-08
ZERO_NORMAL_TOL	= 1.000000e-06
SAME_TANGENT_TOL	= 1.000000e-04
SAME_CURVATURE_TOL	= 1.000000e-04
SAME_DERIVATIVE_TOL	= 1.000000e-03
MODEL_LINEAR_APPROX_TOL	= 2.220446e-16

***** Entity Listing Before Validation *****

Count	Type	Form	Description
----	----	----	-----
927	100	0	Circular Arc
745	110	0	Line
412	112	0	Parametric Spline Curve
596	124	0	Transformation Matrix
374	230	0	Section Area (Standard Fill)
3	304	2	Line Font Definition (Pattern)
608	402	7	Group (Unordered, w/o back ptrs)

3665 - Number of entities in selection list

***** Entity Validation *****

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 7, TF 124:0) This Transformation Matrix entity (124) has a a column that is not a unit vector within the stated tolerance.

Action taken: All vectors have been unitized.

*** Warning (IEVM_BAD_DETERM_124) ***

(DE 7, TF 124:0) This Transformation Matrix entity (124) has an invalid determinant value. Value found was 0.8920660458. For form 0, the determinate must be 1.0

*** Warning (IEVM_BAD_CROSS_PROD_124) ***

(DE 7, TF 124:0) This Transformation Matrix entity (124:0) is not orthogonal.

Action taken: The entity has been made orthogonal by assuming X and Y are correct.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 41, TF 124:0) This Transformation Matrix entity (124) has a a column that is not a unit vector within the stated tolerance.

Action taken: All vectors have been unitized.

*** Warning (IEVM_NON_CONTINUOUS_112) ***

(DE 47, TF 112:0) This Parametric Spline Curve entity contains segments that are discontinuous within the stated tolerance.

Action taken: The Spline was converted to a C0 continuous Parametric Spline Curve by creating continuity segments between the discontinuous points.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_CONTINUITY_112) ***

(DE 575, TF 112:0) This Parametric Spline Curve entity's (112) Degree of Continuity (Index 2 of the Parameter Data) is incorrectly specified as 0. Degree of Continuity is calculated to be 2.

Action taken: The Degree of Continuity has been set to 2.

*** Warning (IEVM_BAD_DE_MATRIX_PTR) ***

(DE 579, TF 100:0) This entity references a Transformation Matrix entity (124) in its DE section. The Transformation Matrix entity (whose DE number is 577) being referenced does not conform to IGES. Refer to other validation messages based on the Transformation Matrix Entity's DE number to determine the exact cause of the problem.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_DE_SUBENT_402_7) ***
(DE 615, TF 402:7) This Associativity Instance Group W/O Back Pointers entity (402:7) references an entity whose DE 611 failed validation as an IGES entity. Action taken: DE pointer, 611, was deleted from parent.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***
(DE 1997, TF 100:0) This circular arc entity's start point and end point radii are not equal in length. Start point radius: 5.5422000e+00. Terminate point radius: 5.5423030e+00.
Action taken: Start point moved 5.1475470e-05 units from -5.5422000e+00, -0.0000000e+00 to -5.5422515e+00, 0.0000000e+00. Terminate point moved 5.1475470e-05 units from -3.9190000e+00, -3.9190000e+00 to -3.9189636e+00, -3.9189636e+00.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Entity Validation Summary:

Type	Form	Entity Count	Number Valid	Number of Corrected		Number of Uncorrected	
				Warnings	Errors	Warnings	Errors
Global Section		1	1	0	0	0	0
100	0	927	890	0	2	0	35
110	0	745	745	0	0	0	0
112	0	412	60	0	352	0	0
124	0	596	1	0	1027	0	456
230	0	374	374	0	0	0	0
304	2	3	3	0	0	0	0
402	7	608	584	35	0	0	0
Totals:		3666	2658	35	1381	0	491

The following message was issued and suppressed 30 times:

This entity references a Transformation Matrix entity (124) in its DE section. The Transformation Matrix entity (whose DE number is %ld) being referenced does not conform to IGES. Refer to other validation messages based on the Transformation Matrix Entity's DE number to determine the exact cause of the problem.

The following message was issued and suppressed 310 times:

This Parametric Spline Curve entity contains segments that are discontinuous within the stated tolerance.

The following message was issued and suppressed 32 times:

This Parametric Spline Curve entity's (112) Degree of Continuity (Index 2 of the Parameter Data) is incorrectly specified as %d. Degree of Continuity is calculated to be %d.

The following message was issued and suppressed 451 times:

This Transformation Matrix entity (124) has an invalid determinant value. Valuefound was %-10.10f. For form %d, the determinate must be %-1.1f.

The following message was issued and suppressed 590 times:

This Transformation Matrix entity (124) has a a column that is not a unit vector within the stated tolerance.

The following message was issued and suppressed 427 times:

This Transformation Matrix entity (124:0) is not orthogonal.

The following message was issued and suppressed 30 times:

This Associativity Instance Group W/O Back Pointers entity (402:7) references an entity whose DE %ld failed validation as an IGES entity.

A message is suppressed when it has been issued more than 5 times. This value is controlled by the 'MAX_MESSAGE' configuration parameter.

10.1.4 Error Log - Preview

ERROR REPORT FOR FILE /novell/94012/q001.igs

>> File record length is 81 (1 record terminator used)
Terminate section report :

File Section	#lines
START	1
GLOBAL	4
DIRECTORY ENTRY	7330
PARAMETER DATA	6662
TERMINATE	1
TOTAL	13998

(Expect 81 X, 13998 = 1133838 bytes)

----- preliminary format scan complete -----

>> WARNING: Invalid transform matrix.
: Transform form 0 requires an orthogonal matrix.
: Reading entity #4, DE entry #7 type TRANSFORM MATRIX.
: Starting at line 4 of PARAMETER DATA section.

>> WARNING: Invalid transform matrix.
: Transform form 0 requires an orthogonal matrix.
: Reading entity #8, DE entry #15 type TRANSFORM MATRIX.
: Starting at line 9 of PARAMETER DATA section.

<<<< PART OF LOG FILE REMOVED HERE >>>>

>> WARNING: Sectioned Area type 19 not supported
: Reading entity #25, DE entry #49 type SECTIONED AREA.
: Field 2, line 36 of PARAMETER DATA section.

230,47,19,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0;

49P

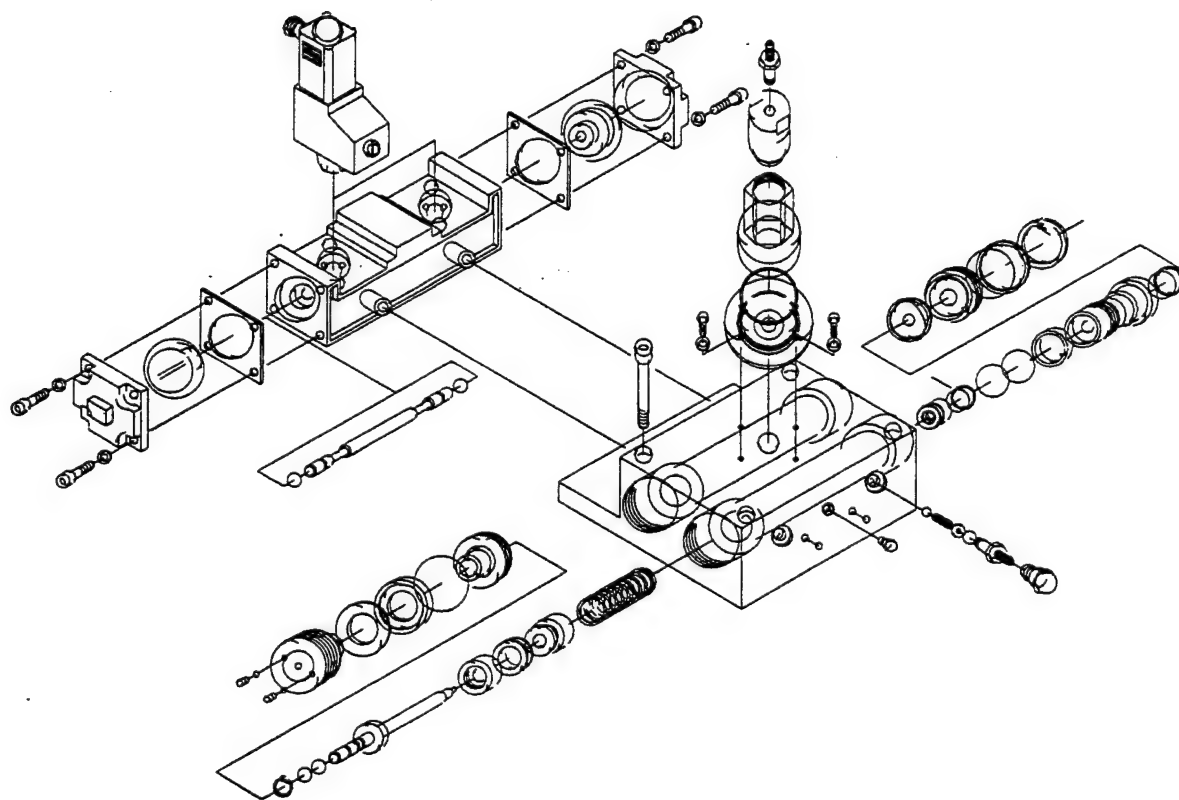
36

<<<< PART OF LOG FILE REMOVED HERE >>>>

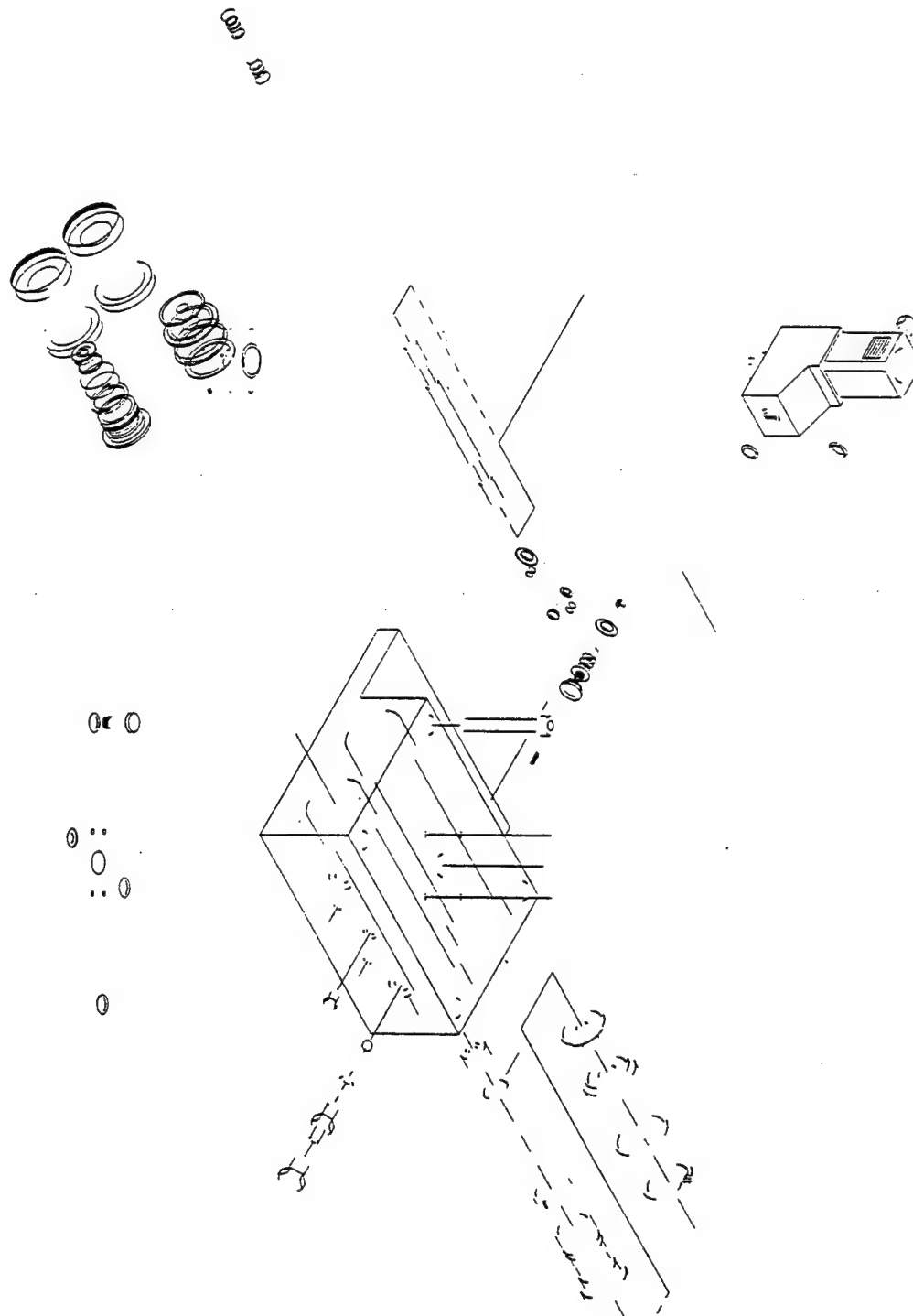
>> WARNING: Unsupported sectioned area type 19 modified to 16
: in entity 3631 for graphic output.

Found 0 errors and 1343 warnings

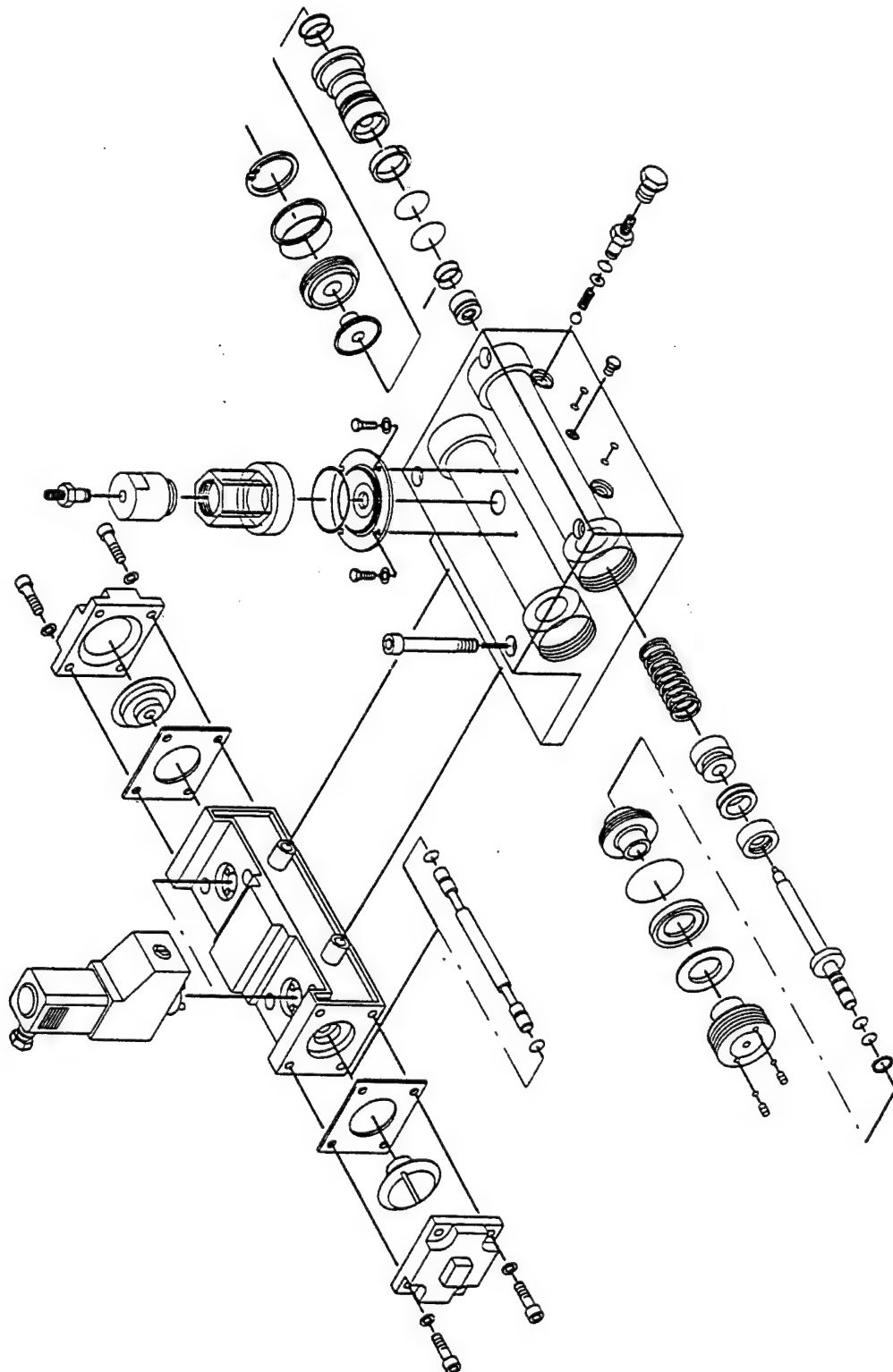
10.1.5 Output AutoCAD R12



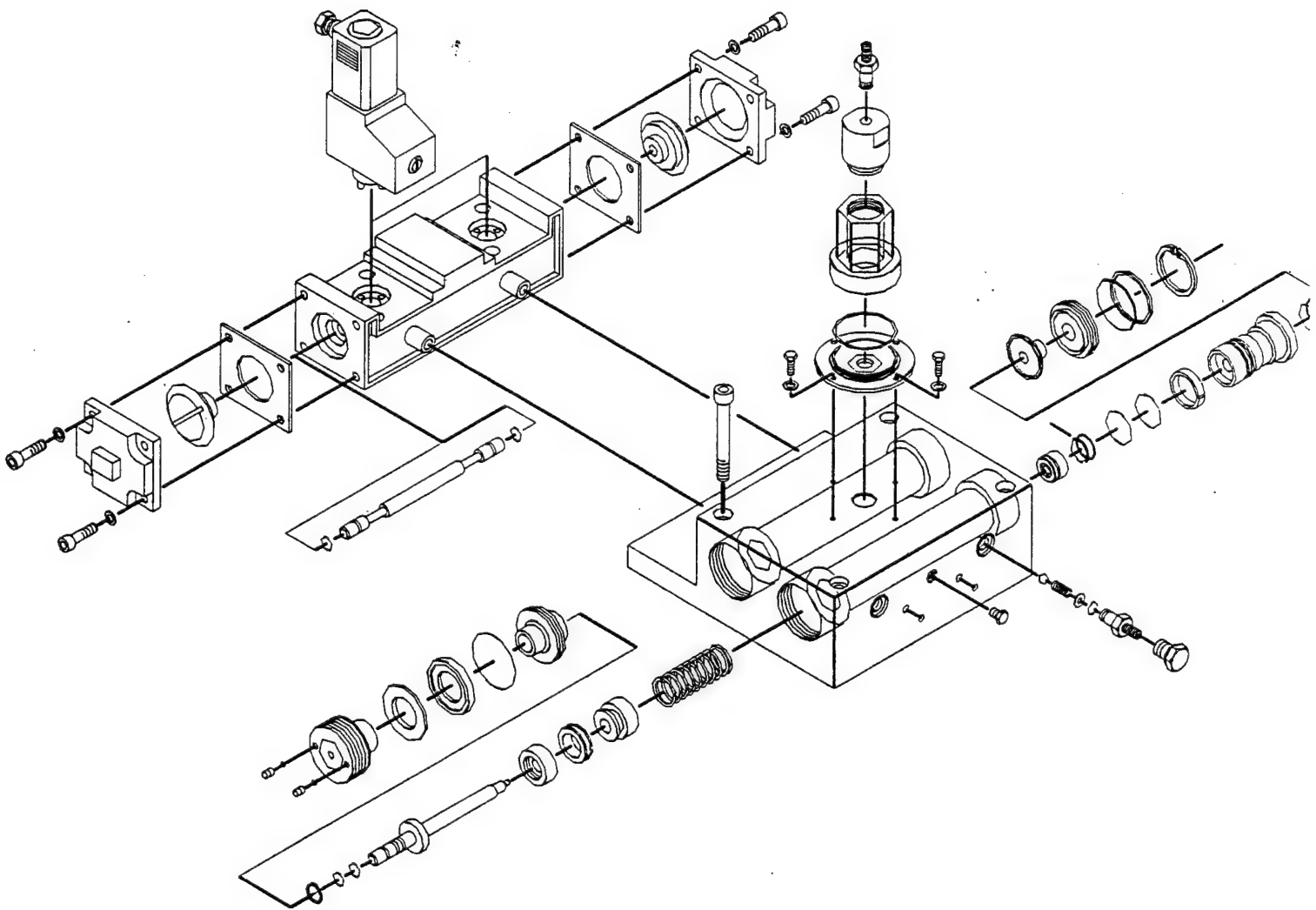
10.1.6 Output Cadkey v6.01



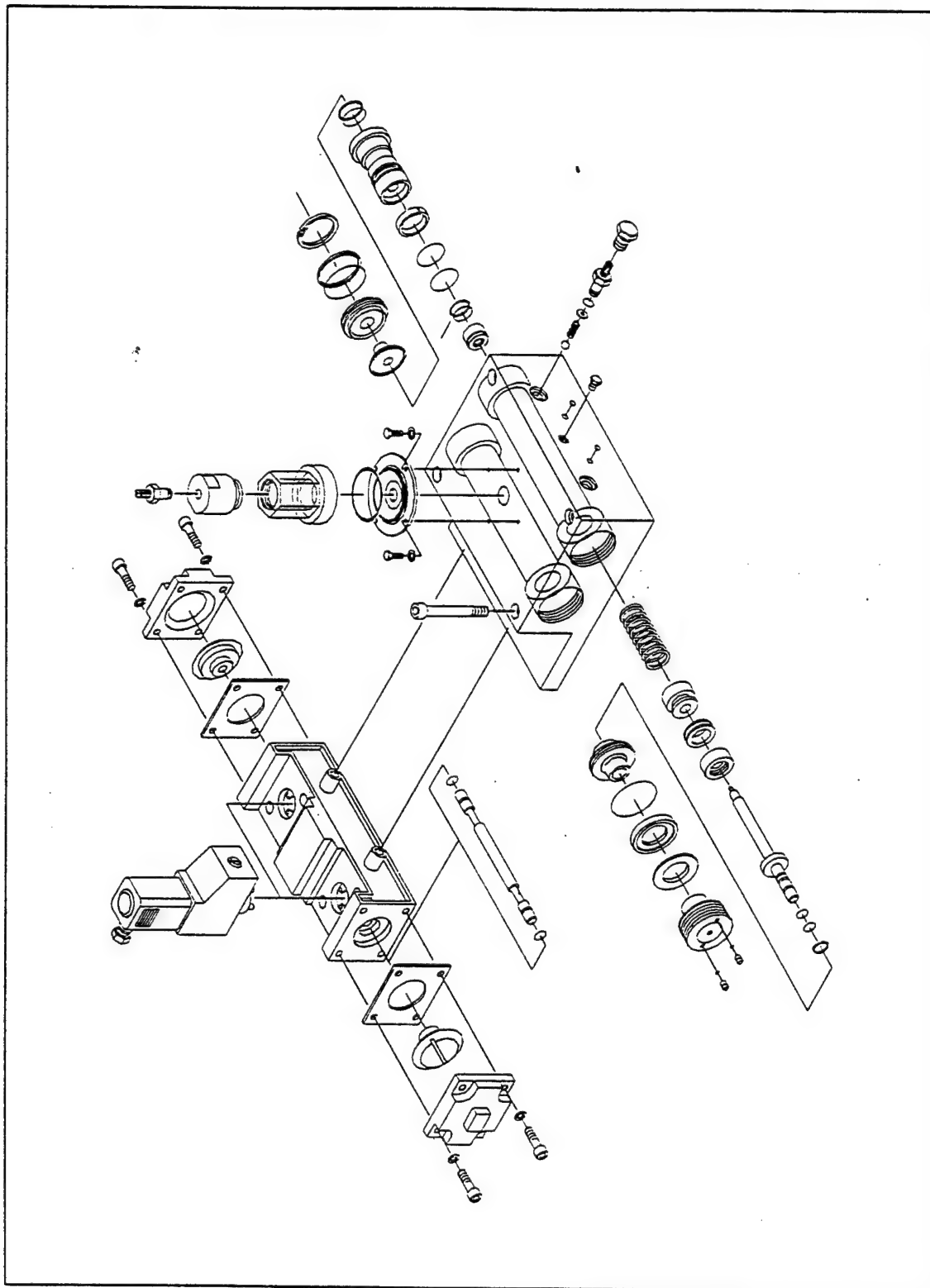
10.1.7 Output CADLeaf



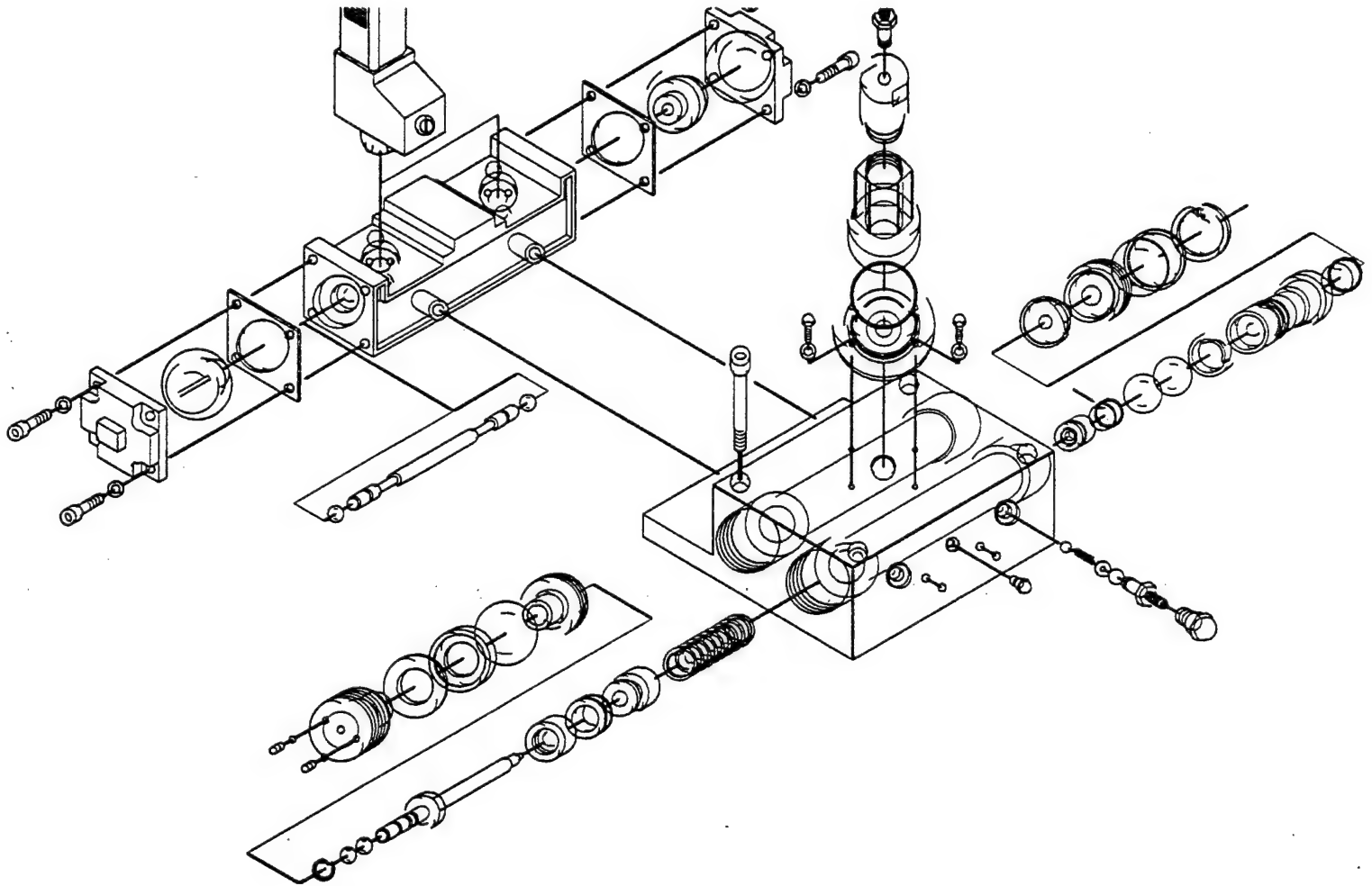
10.1.8 Output IGESView



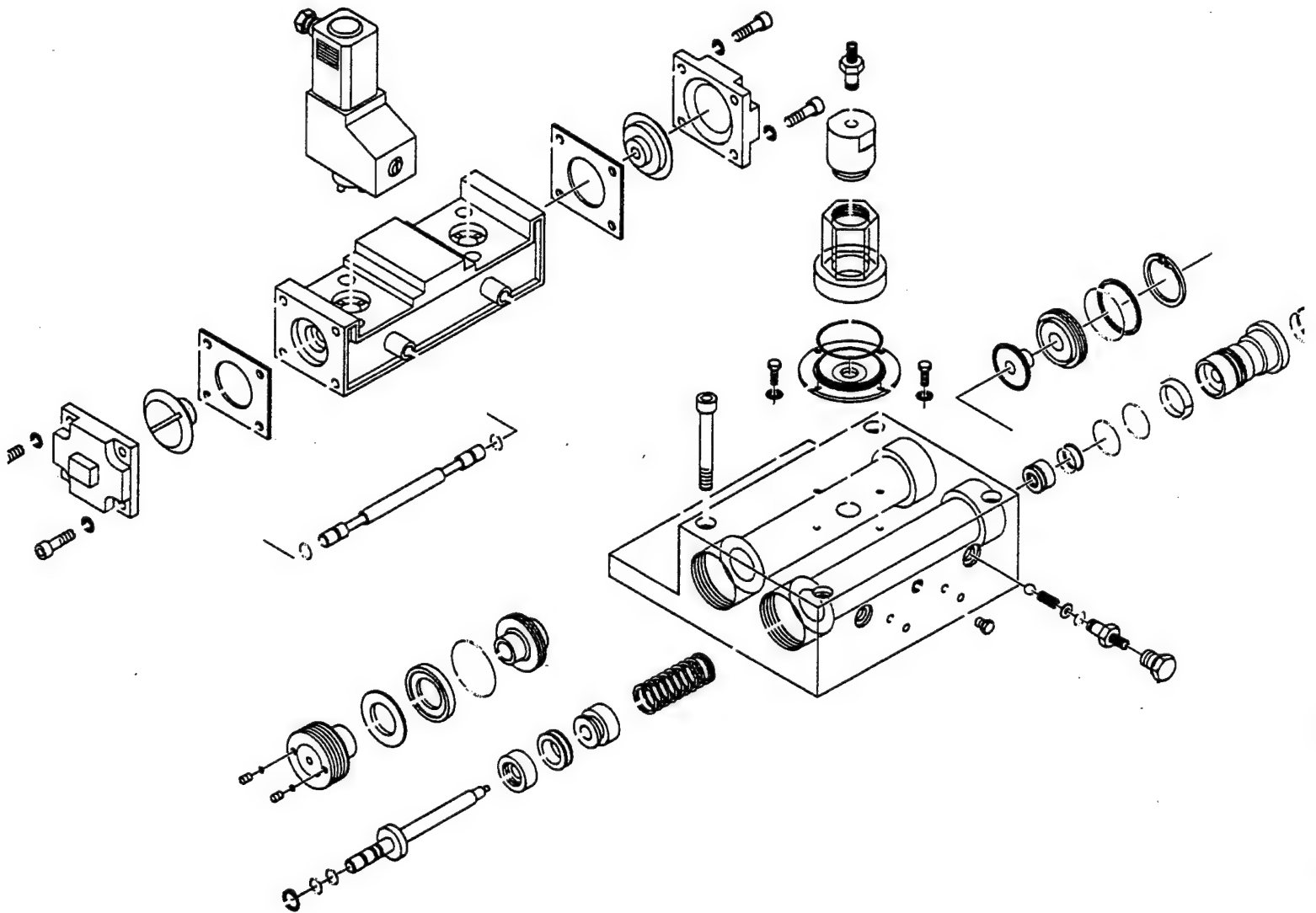
10.1.9 Output IGESWorks



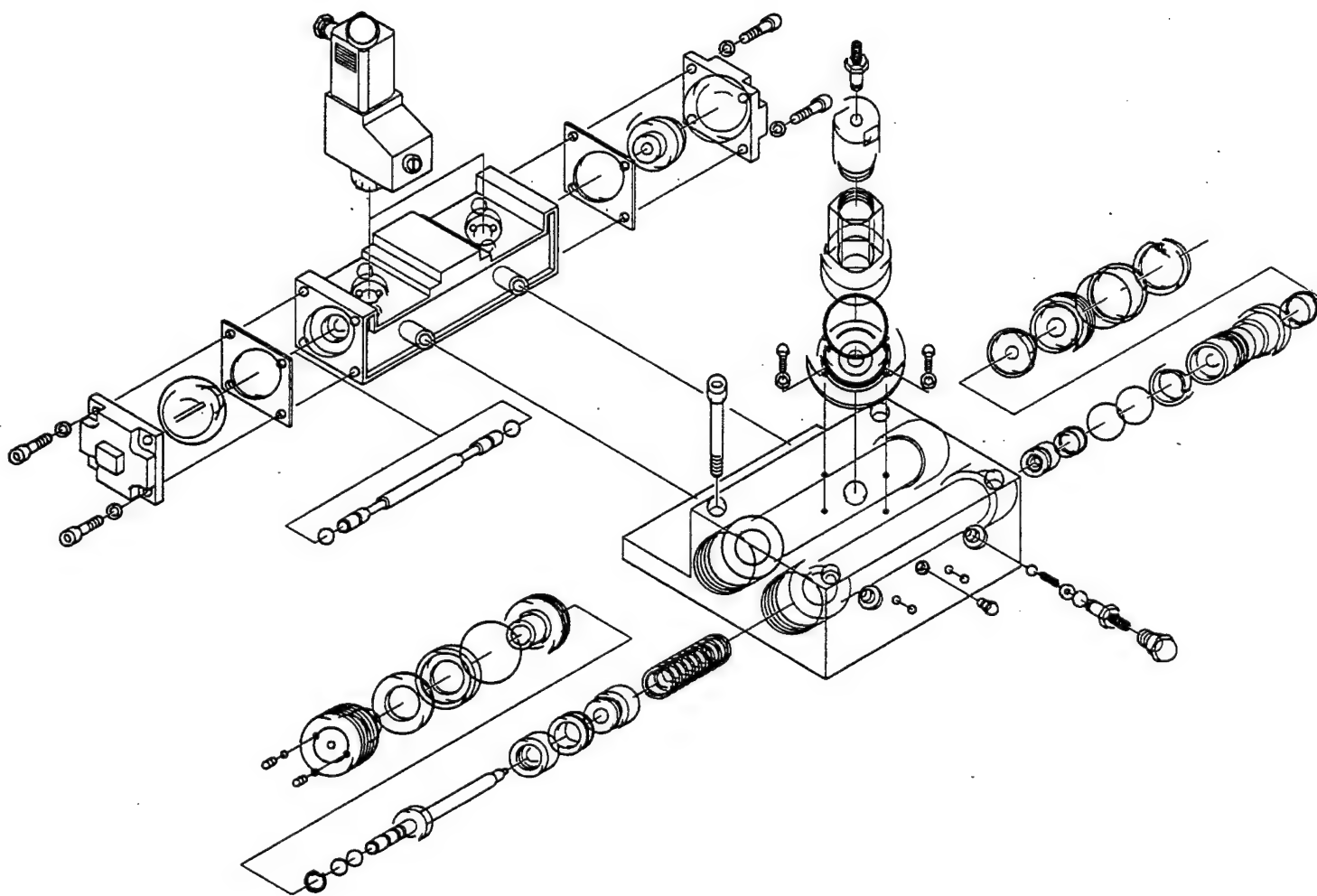
10.1.10 Output Island Draw



10.1.11 Output Preview



10.1.12 Output X-Change



10.2 File D001Q002

10.2.1 Parser/Verifier Log

```
*****
****  IGES PARSE/VERIFIER  ****
****      MARCH 1993      ****
****  IGES Data Analysis  ****
****    (708) 344-1815    ****
*****
```

Input file is q002.igs

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is March 14, 1994 1:19 PM

```
*****
****  CHECK FILE SYNTAX  ****
*****
```

Section	Records		
Start	1 Global	4 Directory	6356 (3178 Entities)
Parameter	4996		
Terminate	1		

NITPICK 2452: No decimal point in basic real constant (10) for L[1] of D1.

NITPICK 2452: No decimal point in basic real constant (5) for L[2] of D1.

NITPICK 2452: Messages regarding missing decimal point suppressed.

```
*****
****  SUMMARY AND STATISTICS  ****
*****
```

*** File and Product Name Information ***

```
File name from sender   = 'Air Filter System.IGS'
File creation Date.Time = '940307.083101'
Model change Date.Time  = ''
Author                  = 'PASS'
Department               = 'Ove Schuett'
Product name from sender = 'PASS Incorporated'
Destination product name = 'Computing Device Manufacturing'
```

*** Parameter Delimiters ***

Delimiter = ','
Terminator = ';'

*** Originating System Data ***

System ID = 'Macintosh'
Preprocessor version = 'ITEDO IsoDraw'
Specification version = 6 (IGES 4.0)

*** Precision levels ***

Integer bits = 32
Floating point - Exponent = 8 Mantissa = 24
Double precision - Exponent = 8 Mantissa = 53

NITPICK 2329: Real constant characteristics inconsistent with specification version.

*** Global Model Data ***

Model scale = 1.0000E+00
Unit flag = 2
Units = 'MM'
Line weights = 30000
Maximum line thickness = 3.000000E-01
Minimum line thickness = 1.000000E-05
Granularity = 1.000000E-04
Maximum coordinate = 4.049846E+02

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	3178
	Blanked	0
Independence:	Independent	859
	Physically Subordinate	0
	Logically Subordinate	2319
	Totally Subordinate	0

Entity use:	Geometry	2409
	Annotation	20
	Definition	3
	Other	746
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	3178
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	-----	-----	-----	-----
100	0	2	1	Circular arc
100	0	3	2	

<<<< PART OF LOG FILE REMOVED HERE >>>>

100	0	724	1	
100	0	725	9	
110	0	0	89	Line
110	0	1	6	

<<<< PART OF LOG FILE REMOVED HERE >>>>

110	0	725	2	
110	0	726	40	
112	0	3	2	Parametric spline curve
112	0	4	2	

<<<< PART OF LOG FILE REMOVED HERE >>>>

112	0	719	2	
112	0	722	4	
124	0	0	707	Transformation matrix
212	0	727	1	General note
212	0	728	1	
212	0	729	1	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

212	0	745	1	
212	0	746	1	
230	0	3	2	Sectioned area (Standard Crosshatching)
230	0	4	2	
212	0	744	1	
230	0	6	2	
230	0	9	2	
230	0	10	2	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

230	0	718	2	
230	0	719	2	
304	2	0	3	Line font definition - repeating pattern
402	7	0	60	Group without back-pointers instance
402	7	1	6	
402	7	8	7	
402	7	16	190	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

402	7	717	4
402	7	722	3

ERROR 4031: CALS Class I requires that exactly one drawing be defined.
ERROR 4032: CALS Class I requires that exactly one view be defined.

*** Entity Count by Level ***

Level	Count
0	859
1	12
2	1
3	6

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

743	1
744	1
745	1
746	1

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 3178

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114		
-	-	-	-	-	-	146	-	Undefined	
847	-	-	-	-	454	65	-	Solid	
-	-	-	-	-	-	-	-	Dashed	
-	-	-	-	-	-	-	-	Phantom	
-	-	-	-	-	-	-	-	Center-line	
-	-	-	-	-	-	-	-	Dotted	
-	-	-	-	-	44	-	-	User defined	
116	118	120	122	124	125	126	128		
-	-	-	-	707	-	-	-	Undefined	
-	-	-	-	-	-	-	-	Solid	
-	-	-	-	-	-	-	-	Dashed	

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	3	(0.0000)
1	1765	(0.0000)
30000	428	(0.3000)
12000	915	(0.1200)
32767	65	(0.3277)
20000	2	(0.2000)

*** Colors Used in Data ***

Defaulted	1456
Black	1657
White	65

 ***** ENTITY ANALYSIS *****

*** Entity type: 100

ERROR 4045: Illegal level for CALS Class I specified at D 9.
 ERROR 4045: Illegal level for CALS Class I specified at D 15.
 ERROR 4045: Messages regarding illegal levels suppressed.
 WARNING 2314: Line width specified (32767) exceeds declared maximum (30000)
 at D 5577.

*** Entity type: 110

WARNING 2314: Line width specified (32767) exceeds declared maximum (30000)
at D 3459.
ERROR 4046: Illegal line font for CALS Class I specified in D 3461.
WARNING 2314: Line width specified (32767) exceeds declared maximum (30000)
at D 3463.
ERROR 4046: Illegal line font for CALS Class I specified in D 3465.
WARNING 2314: Messages suppressed
ERROR 4046: Messages regarding illegal line fonts suppressed.
-- 498 lines averaging 6.789286E+00 units --

*** Entity type: 112

WARNING 2002: 1 discontinuities in spline curve at D 19, largest is
1.000000E-04 units.
WARNING 2492: Undefined line font value (0) specified for D 19.
WARNING 2002: 2 discontinuities in spline curve at D 23, largest is
1.000000E-04 units.
WARNING 2492: Undefined line font value (0) specified for D 23.
WARNING 2492: Messages regarding undefined line font suppressed.
WARNING 2002: Messages regarding discontinuities in spline curve suppressed.

*** Entity type: 124

WARNING 2313: Improper definition space (defining vector magnitude not unit by
4.264000E-01) at D 7.
ERROR 2095: Improper definition space at D 7, determinant not +1. by
4.264000E-01.
WARNING 2313: Messages regarding definition space suppressed.
ERROR 2095: Messages regarding improper definition space suppressed.
707 transformation matrices, 707 non-zero translations.
NOTE 2341: 707 matrices contain translation information.

*** Entity type: 212

20 text strings in data file.
Average text aspect ratio in file is 0.6274994.
Minimum text aspect ratio in file is 0.6000057.
Maximum text aspect ratio in file is 0.6499943.

FONTS USED IN FILE

FONT	COUNT	NAME
1	20	Default ASCII Style

*** Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D 21.
NITPICK 2076: Entity does not have Annotation flag set at D 25.
NITPICK 2076: Messages regarding entity use (annotation) suppressed.

*** Entity type: 304

WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D 1 is Undefined.
WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D 3 is Undefined.
WARNING 4038: Entity type is not allowed in CALS Class I.
Default line font substitute at D 5 is Undefined.

*** Entity type: 402

WARNING 4038: Entity type is not allowed in CALS Class I.
WARNING 4038: Entity type is not allowed in CALS Class I.
WARNING 4038: Entity type is not allowed in CALS Class I.

<<<< PART OF LOG FILE REMOVED HERE >>>>

WARNING 4038: Entity type is not allowed in CALS Class I.
WARNING 4038: Entity type is not allowed in CALS Class I.

*** Message Summary ***

2007: 152 Mathematical discontinuities.
2015: 707 Mathematically incorrect definitions.
2016: 146 Invalid entity use flag.
2018: 65 Problems with line weight/width display information.
2038: 1768 Invalid Line font values.
4000: 2 Miscellaneous CALS messages
4016: 336 Illegal line fonts
4018: 749 Illegal entity types
4020: 1487 Illegal levels

*** Error Summary ***

0 fatal errors
0 severe errors
2532 errors
3441 warnings
0 cautions
3565 nitpicks
1 notes

*** End of Analysis of q002.igs ***

10.2.2 Parser Log - AutoCAD R12

Title: IGESIN Journal (v5.1 Nov 05 1992)

File: C:/TMP/Q002.xli

Date: Mon, Mar 14, 1994

Time: 14:31:31

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N: 117-10075750

Translating from IGES file: C:/TMP/Q002.IGS
to AutoCAD Drawing: C:\Q002.dwg

Options obtained from: default settings

Curves Approximated to Tolerance of 0.01

Surfaces Approximated to Tolerance of 0.01

Text Font/Style mapping:

IGES Text font	Style Name	ACAD Font
0	SYMBOL0	iges0
1	STANDARD	txt
2	LEROY	txt
3	FUTURA	txt
6	COMP80	txt
12	GOTHICE	gothice
13	GOTHICI	gothici
14	ROMANS	romans
17	ROMANT	romant
18	ROMAND	romand
19	OCR	txt
1001	SYMBOL1	iges1001
1002	SYMBOL2	iges1002
1003	SYMBOL3	iges1003
2001	KANJI	bigfont

IGES Linefont/AutoCAD Linetype mapping

IGES Line Font	AutoCAD linetype	Shape file
0	BYLAYER	
1	CONTINUOUS	
2	DASHED	acad.lin
3	PHANTOM	acad.lin
4	CENTER	acad.lin
5	DOT	acad.lin

=====

Parse phase

*** Warning (IAFP__LARGER_SGL_SIG) ***

C:/TMP/Q002.IGS, line 5: IGES file has greater number of significant digits in single precision numbers than this system.

*** Warning (IAFP__LARGER_DBL_SIG) ***

C:/TMP/Q002.IGS, line 5: IGES file has greater number of significant digits in double precision numbers than this system.

*** Warning (IAFP__FLOAT_EXPECTED) ***

304,2,10,5,1H2,0,0; 1P 1

C:/TMP/Q002.IGS, line 6362: Integer found where floating point type was expected. Integer value will be converted to floating point.

*** Warning (IAFP__FLOAT_EXPECTED) ***

304,2,10,5,1H2,0,0; 1P 1

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

C:/TMP/Q002.IGS, line 6373: Integer found where floating point type was expected. Integer value will be converted to floating point.

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 7, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 13, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***

(DE 57, TF 100:0) Entity's radii are not equal. Start point radius: 1.1700000e+001. Terminate point radius: 1.1699974e+001.

Action taken: Start point moved 1.3183562e-005 units from 1.1700000e+001, 0.0000000e+000 to 1.1699987e+001, 0.0000000e+000. Terminate point moved 1.3183562e-005 units from 6.6485000e+000, 9.6274000e+000 to 6.6485075e+000, 9.6274108e+000.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_DETERM_124) ***

(DE 191, TF 124:0) Entity has an invalid determinant value. Value found was 0.6522742065. For form 0, the determinate must be 1.0

*** Warning (IEVM_BAD_CROSS_PROD_124) ***

(DE 191, TF 124:0) Entity's is not orthogonal.

Action taken: Entity made orthogonal by assuming X and Y are correct.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_LINE_WEIGHT) ***

(DE 3459, TF 110:0) DE has an invalid line weight.
Value found was 32767.

Action taken: The line weight has been set to 30000.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_CONTINUITY_112) ***

(DE 3825, TF 112:0) Entity's Degree of Continuity, 0, is incorrectly specified.
Degree of Continuity calculated to be 2.

Action taken: Degree of Continuity set to 2.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_CONTINUITY_112) ***

(DE 4519, TF 112:0) Entity's Degree of Continuity, 0, is incorrectly specified.
Degree of Continuity calculated to be 2.

Action taken: Degree of Continuity set to 2.

=====
Start Section:

Global Section:

Parameter Delimiter:	,
Record Delimiter:	;
Sending Product ID:	PASS Incorporated
File Name:	Air Filter System.IGS
System ID:	Macintosh
Preprocessor Version:	ITEDO IsoDraw
Size of Integer:	32
Sgl. Precision Mag:	8
Sgl. Precision Sig:	24
Dbl. Precision Mag:	8
Dbl. Precision Sig:	53

Receiving Product ID: Computing Device Manufacturing
Model Space Scale: 1.000000
Unit Flag: 2
Unit String: MM
of Line Weights: 30000
Maximum Line Width: 0.300000
Creation Date: 03/07/94 08:31:01
Minimum Resolution: 0.000100
Maximum Coordinate: 404.984600
Author: PASS
Organization: Ove Schuett
IGES Version Number: 6
Drafting Standard: 0

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	847
110	0	Line	498
112	0	Parametric Spline Curve	211
124	0	Transformation Matrix	707
212	0	General Note (Simple)	20
230	0	Section Area (Standard Fill)	146
304	2	Line Font Definition (Pattern)	3
402	7	Group (Unordered, w/o back ptrs)	746
Total			3178

Translation phase

*** Error (IGEO_SECTAREANOTCLOSED) ***
(DE: 25 TF: 230:0 NAME: Section Area (Standard Fill))
The section area is not closed.

*** Error (IGEO_SECTAREANOTCLOSED) ***
(DE: 37 TF: 230:0 NAME: Section Area (Standard Fill))
The section area is not closed.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Error (IGEO_SECTAREANOTCLOSED) ***
(DE: 3789 TF: 230:0 NAME: Section Area (Standard Fill))
The section area is not closed.

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	847	847	0
110	0	Line	498	498	0
112	0	Parametric Spline Curve	211	211	0
124	0	Transformation Matrix	116	0	116
212	0	General Note (Simple)	20	20	0
230	0	Section Area (Standard Fill)	146	146	0
304	2	Line Font Definition (Pattern)	1	1	0
402	7	Group (Unordered, w/o back ptrs)	746	746	0
Totals			2585	2469	116

AutoCAD Entity Summary

Entity	Created	Errors
LINE	1570	0
CIRCLE	480	0
TEXT	20	0
ARC	367	0
INSERT	146	0
POLYLINE	211	0
BLOCK	146	0
Totals	2940	0

Error Summary:

The following message was issued 1 time(s)
IGES file has greater number of significant digits in single precision numbers than this system.

The following message was issued 1 time(s)
IGES file has greater number of significant digits in double precision numbers than this system.

The following message was issued 3418 time(s)
Integer found where floating point type was expected. Integer value will be converted to floating point.

The following message was issued 65 time(s)
DE has an invalid line weight.
Value found was %d.

The following message was issued 172 time(s)
Entity's radii are not equal. Start point radius: %.7e. Terminate point radius: %.7e.

The following message was issued 56 time(s)
Entity's Degree of Continuity, %d, is incorrectly specified. Degree of
Continuity calculated to be %d.

The following message was issued 614 time(s)
Entity has an invalid determinant value. Value found was %-10.10f. For form
%d, the determinate must be %-1.1f

The following message was issued 707 time(s)
Entity has a column which is not a unit vector.

The following message was issued 498 time(s)
Entity's is not orthogonal.

The following message was issued 58 time(s)
The section area is not closed.

Status: 0
Warning: 5532
Error: 58
Fatal: 0

Elapsed Time:

Processor: 00:01:44
Clock: 00:01:44

=====

10.2.3 Parser Log - IGESWorks

IGES/Works v1.4.1
International TechneGroup Incorporated
Validation Logfile

Date: March 14, 1994
Model: q002

***** Validation Parameters *****

TOLERANCE CONFIGURATION VALUES

ZERO_TOL	= 1.000000e-13
MODEL_SPACE_PNT_COIN_TOL	= 1.000000e-03
PARM_SPACE_PNT_COIN_TOL	= 1.000000e-08
ISO_PARM_CURVE_TOL	= 1.000000e-08
NON_CONV_TOL	= 1.000000e-12
KNOT_COIN_TOL	= 1.000000e-10
SAME_INTER_TOL	= 1.000000e-12
PARALLEL_LINES_TOL	= 1.000000e-07
ANGLE_COIN_TOL	= 1.000000e-05
PNT_PROJ_TOL	= 1.000000e-07
COLIN_TOL	= 1.000000e-07
COPLANAR_TOL	= 1.000000e-08
ZERO_NORMAL_TOL	= 1.000000e-06
SAME_TANGENT_TOL	= 1.000000e-04
SAME_CURVATURE_TOL	= 1.000000e-04
SAME_DERIVATIVE_TOL	= 1.000000e-03
MODEL_LINEAR_APPROX_TOL	= 2.220446e-16

***** Entity Listing Before Validation *****

Count	Type	Form	Description
----	----	----	-----
847	100	0	Circular Arc
498	110	0	Line
211	112	0	Parametric Spline Curve
707	124	0	Transformation Matrix
20	212	0	General Note (Simple)
146	230	0	Section Area (Standard Fill)
3	304	2	Line Font Definition (Pattern)
746	402	7	Group (Unordered, w/o back ptrs)

3178 - Number of entities in selection list

***** Entity Validation *****

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 7, TF 124:0) This Transformation Matrix entity (124) has a a column that is not a unit vector within the stated tolerance.

Action taken: All vectors have been unitized.

*** Warning (IEVM_BAD_VECTOR_124) ***

(DE 13, TF 124:0) This Transformation Matrix entity (124) has a a column that is not a unit vector within the stated tolerance.

Action taken: All vectors have been unitized.

*** Warning (IEVM_NON_CONTINUOUS_112) ***

(DE 19, TF 112:0) This Parametric Spline Curve entity contains segments that are discontinuous within the stated tolerance.

Action taken: The Spline was converted to a C0 continuous Parametric Spline Curve by creating continuity segments between the discontinuous points.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_DETERM_124) ***

(DE 89, TF 124:0) This Transformation Matrix entity (124) has an invalid determinant value. Value found was 0.8920660458. For form 0, the determinate must be 1.0

*** Warning (IEVM_BAD_DE_MATRIX_PTR) ***

(DE 91, TF 100:0) This entity references a Transformation Matrix entity (124) in its DE section. The Transformation Matrix entity (whose DE number is 89) being referenced does not conform to IGES. Refer to other validation messages based on the Transformation Matrix Entity's DE number to determine the exact cause of the problem.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_DE_SUBENT_402_7) ***

(DE 103, TF 402:7) This Associativity Instance Group W/O Back Pointers entity (402:7) references an entity whose DE 91 failed validation as an IGES entity.

Action taken: DE pointer, 91, was deleted from parent.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_CROSS_PROD_124) ***

(DE 173, TF 124:0) This Transformation Matrix entity (124:0) is not orthogonal.

Action taken: The entity has been made orthogonal by assuming X and Y are correct.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_CONTINUITY_112) ***
(DE 3049, TF 112:0) This Parametric Spline Curve entity's (112) Degree of Continuity (Index 2 of the Parameter Data) is incorrectly specified as 0. Degree of Continuity is calculated to be 2.
Action taken: The Degree of Continuity has been set to 2.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_BAD_LINE_WEIGHT) ***
(DE 3459, TF 110:0) The Line Weight field in this entity's DE section has a value of 32767, which is outside the valid range of 0 to 30000, the global parameter 16 value of the global section.
Action taken: The Line Weight field has been set to: 30000

Entity Validation Summary:

Type	Form	Entity Count	Number Valid	Number of Corrected		Number of Uncorrected	
				Warnings	Errors	Warnings	Errors
Global Section		1	1	0	0	0	0
100	0	847	700	1	0	0	147
110	0	498	434	64	0	0	0
112	0	211	32	0	179	0	0
124	0	707	0	0	1205	0	614
212	0	20	20	0	0	0	0
230	0	146	146	0	0	0	0
304	2	3	3	0	0	0	0
402	7	746	631	146	0	0	0
Totals:		3179	1967	211	1384	0	761

The following message was issued and suppressed 142 times:

This entity references a Transformation Matrix entity (124) in its DE section. The Transformation Matrix entity (whose DE number is %ld) being referenced does not conform to IGES. Refer to other validation messages based on the Transformation Matrix Entity's DE number to determine the exact cause of the problem.

The following message was issued and suppressed 60 times:

The Line Weight field in this entity's DE section has a value of %d, which is outside the valid range of 0 to %d, the global parameter 16 value of the global section.

The following message was issued and suppressed 116 times:

This Parametric Spline Curve entity contains segments that are discontinuous within the stated tolerance.

The following message was issued and suppressed 53 times:

This Parametric Spline Curve entity's (112) Degree of Continuity (Index 2 of the Parameter Data) is incorrectly specified as %d. Degree of Continuity is calculated to be %d.

The following message was issued and suppressed 609 times:

This Transformation Matrix entity (124) has an invalid determinant value. Value found was %-10.10f. For form %d, the determinate must be %-1.1f

The following message was issued and suppressed 702 times:

This Transformation Matrix entity (124) has a a column that is not a unit vector within the stated tolerance.

The following message was issued and suppressed 493 times:

This Transformation Matrix entity (124:0) is not orthogonal.

The following message was issued and suppressed 141 times:

This Associativity Instance Group W/O Back Pointers entity (402:7) references an entity whose DE %ld failed validation as an IGES entity.

A message is suppressed when it has been issued more than 5 times. This value is controlled by the 'MAX_MESSAGE' configuration parameter.

10.2.4 Error Log - Preview

ERROR REPORT FOR FILE /novell/94012/q002.igs

>> File record length is 81 (1 record terminator used)

Terminate section report :

File Section	#lines
START	1
GLOBAL	4
DIRECTORY ENTRY	6356
PARAMETER DATA	4996
TERMINATE	1
TOTAL	11358

(Expect 81 X 11358 = 919998 bytes)

----- preliminary format scan complete -----

>> WARNING: Invalid transform matrix.

: Transform form 0 requires an orthogonal matrix.
: Reading entity #4, DE entry #7 type TRANSFORM MATRIX.
: Starting at line 4 of PARAMETER DATA section.

>> WARNING: Invalid transform matrix.

: Transform form 0 requires an orthogonal matrix.
: Reading entity #7, DE entry #13 type TRANSFORM MATRIX.
: Starting at line 8 of PARAMETER DATA section.

>> WARNING: Sectioned Area type 19 not supported

: Reading entity #11, DE entry #21 type SECTIONED AREA.
: Field 2, line 19 of PARAMETER DATA section.

230,19,19,0.0,0.0,0.0,0.0,0.0,0.0,0,0,0;

21P 19

>> WARNING: Sectioned Area type 19 not supported

: Reading entity #13, DE entry #25 type SECTIONED AREA.
: Field 2, line 27 of PARAMETER DATA section.

230,23,19,0.0,0.0,0.0,0.0,0.0,0.0,0,0,0;

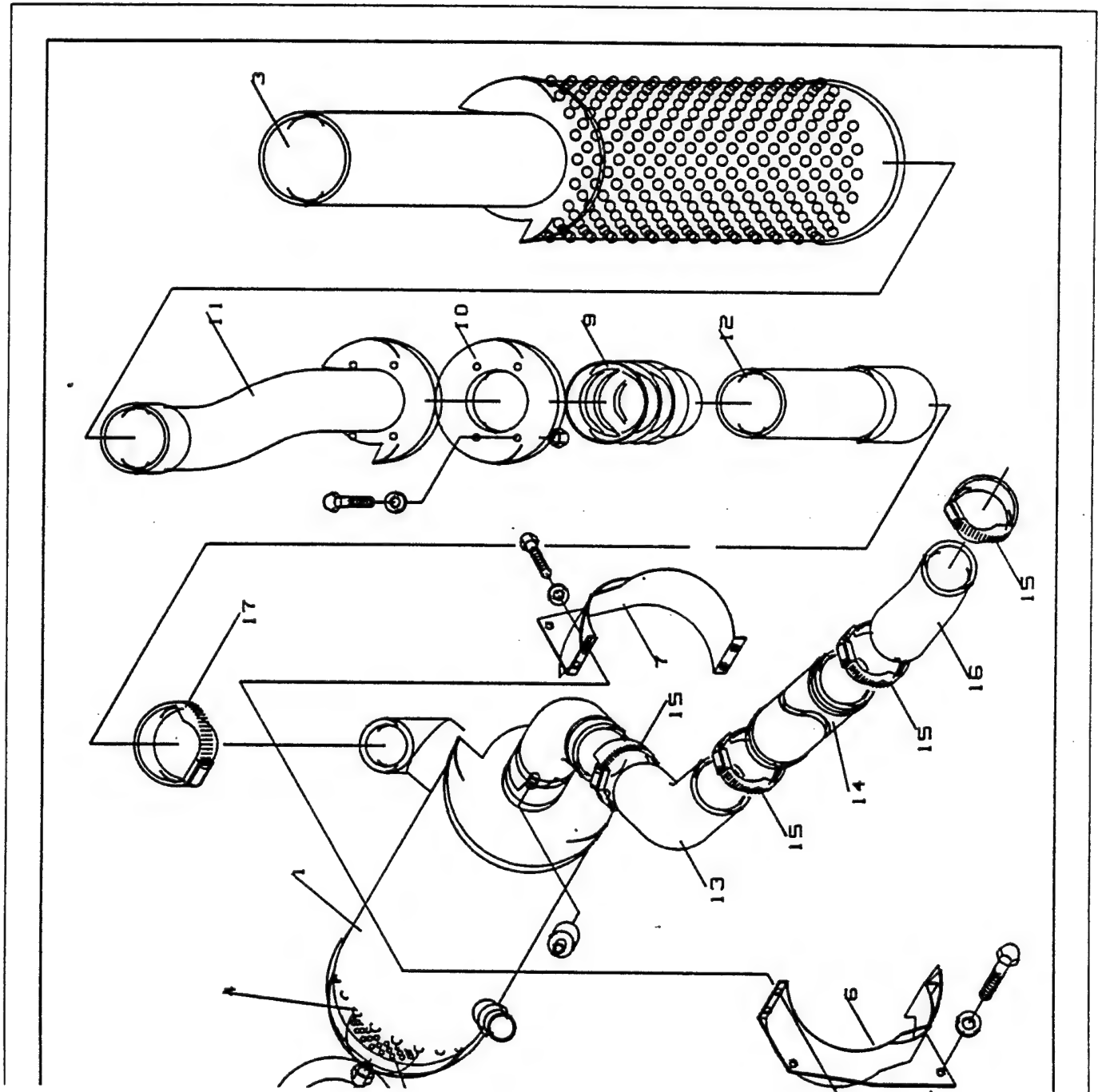
25P 27

<<<< PART OF LOG FILE REMOVED HERE >>>>

>> WARNING: Unsupported sectioned area type 19 modified to 16
: in entity 3044 for graphic output.

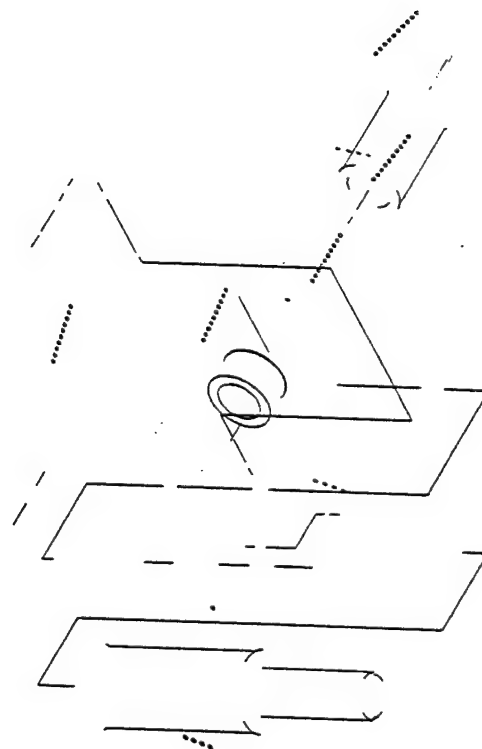
Found 0 errors and 1064 warnings

10.2.5 Output AutoCAD R12

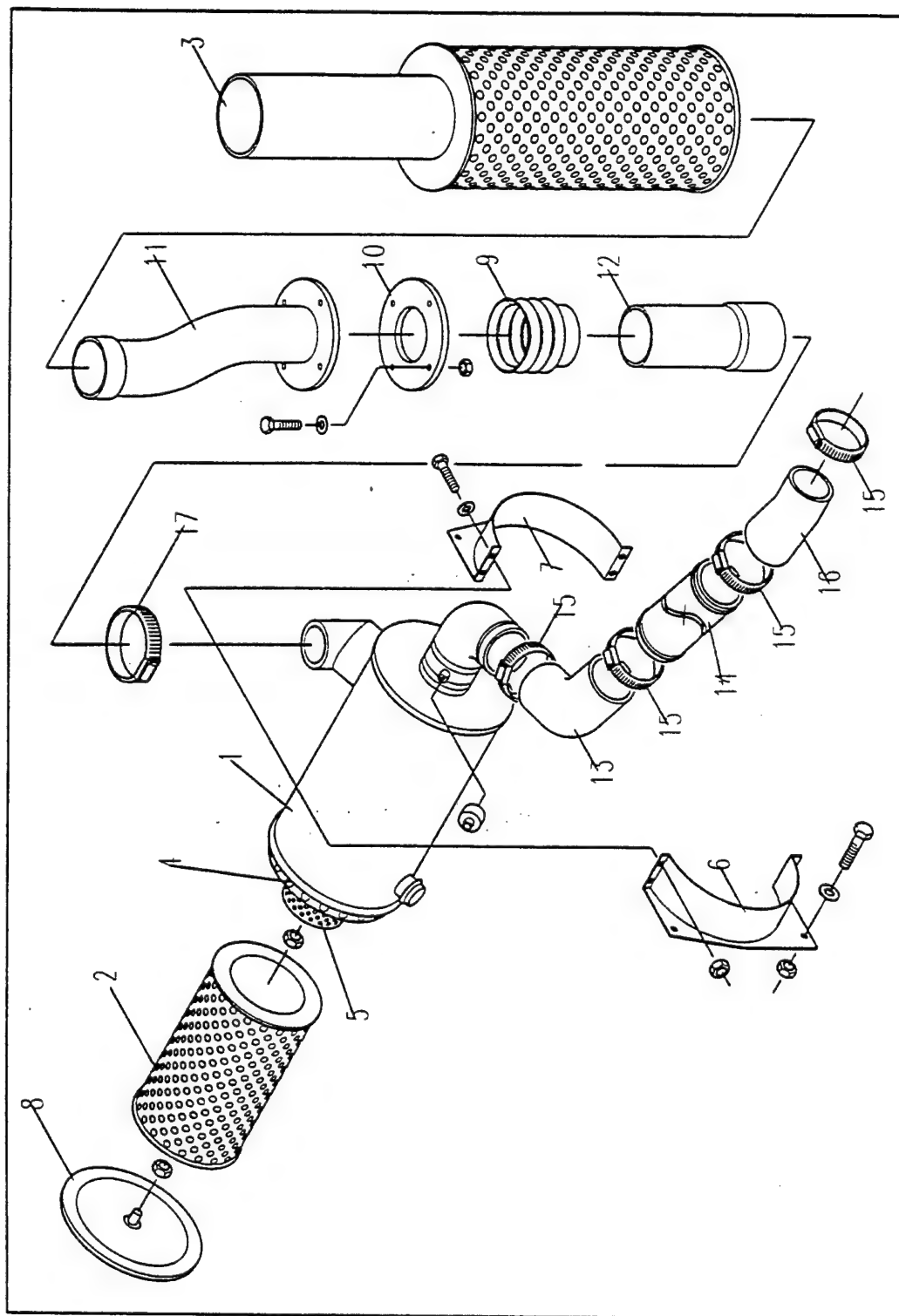


10.2.6 Output Cadkey v6.01

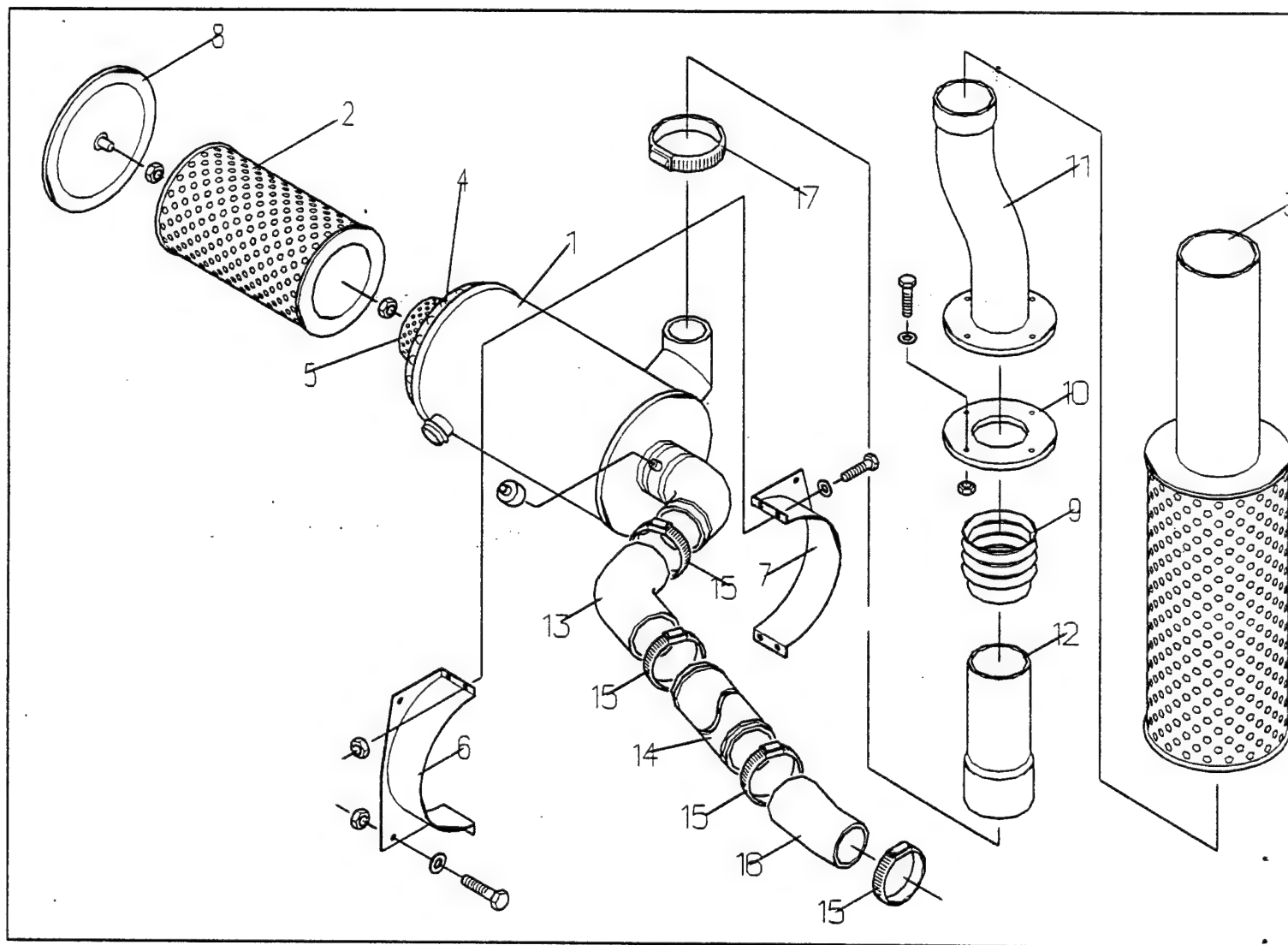
(Co



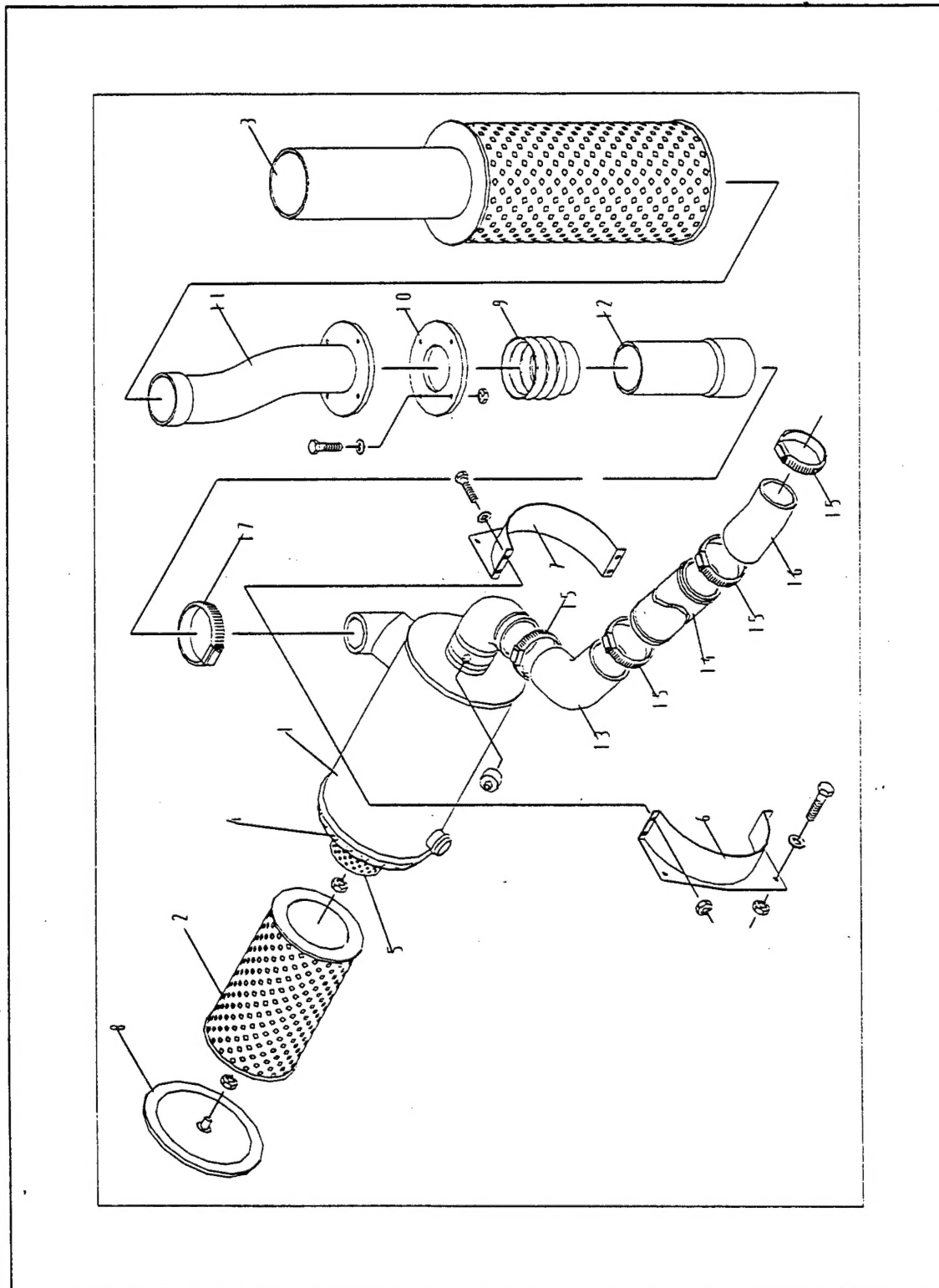
10.2.7 Output CADLeaf



10.2.8 Output IGESView



10.2.9 Output IGESWorks

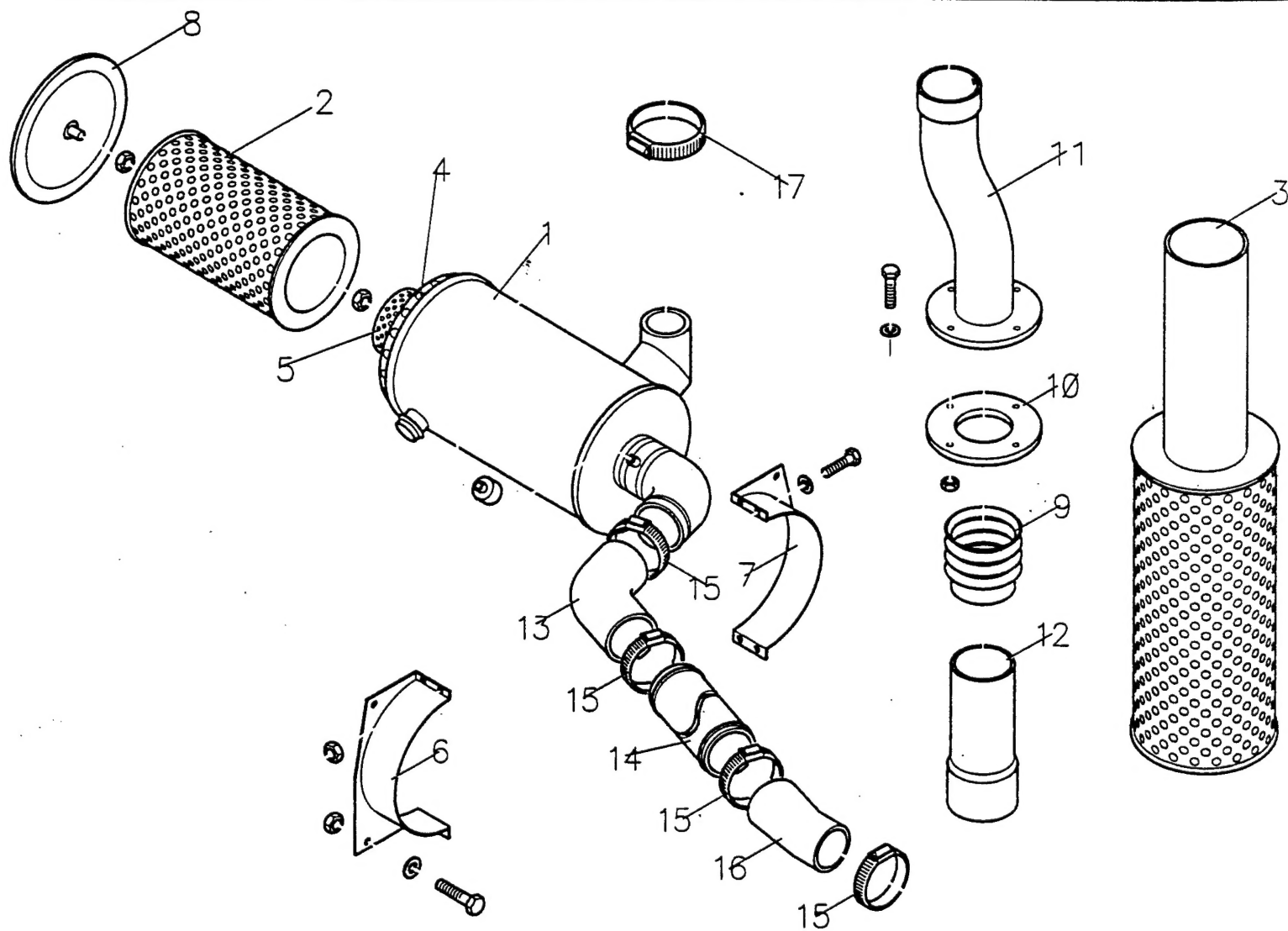


This technical drawing is an exploded view of a mechanical assembly, showing various components and their relative positions. The parts are numbered as follows:

- 1**: A large, curved, semi-circular component, possibly a cover or a housing, featuring a textured, perforated surface.
- 2**: A circular disc or flange with a central hole and a smaller hole offset to the side.
- 3**: A long, cylindrical component with a textured, perforated surface.
- 4**: A small, curved, semi-circular component, similar in shape to part 1 but smaller.
- 5**: A small, circular component, possibly a washer or a small flange.
- 6**: A curved, semi-circular component with a textured, perforated surface.
- 7**: A curved, semi-circular component, possibly a bracket or a support.
- 8**: A small, curved, semi-circular component, possibly a bracket or a support.
- 9**: A small, curved, semi-circular component, possibly a bracket or a support.
- 10**: A small, curved, semi-circular component, possibly a bracket or a support.
- 11**: A long, cylindrical component with a textured, perforated surface.
- 12**: A long, cylindrical component with a textured, perforated surface.
- 13**: A long, cylindrical component with a textured, perforated surface.
- 14**: A small, curved, semi-circular component, possibly a bracket or a support.
- 15**: A small, curved, semi-circular component, possibly a bracket or a support.
- 16**: A small, curved, semi-circular component, possibly a bracket or a support.
- 17**: A small, curved, semi-circular component, possibly a bracket or a support.

The diagram illustrates the assembly of these components, showing how they fit together to form a complete unit. The exploded view allows for a clear understanding of the spatial relationships and the sequence of assembly.

10.2.11 Output Preview



10.2.12 Output X-Change

